US007379630B2

(12) **United States Patent**
Lagakos et al.

(10) **Patent No.: US 7,379,630 B2**
(45) **Date of Patent: May 27, 2008**

(54) **MULTIPLEXED FIBER OPTIC SENSOR SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 62 days.

(21) Appl. No.: **11/250,709**

(22) Filed: **Oct. 7, 2005**

(65) **Prior Publication Data**

US 2006/0072888 A1 Apr. 6, 2006

Related U.S. Application Data

(63) Continuation-in-part of application No. 10/446,256, filed on May 28, 2003, now Pat. No. 7,020,354.

(60) Provisional application No. 60/383,577, filed on May 28, 2002.

(51) **Int. Cl.**
G02B 6/00 (2006.01)

(52) **U.S. Cl.** **385/12**; 385/13; 385/115; 385/119

(58) **Field of Classification Search** 385/12, 385/13, 115
See application file for complete search history.

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(57) **ABSTRACT**

A multiplexed fiber optic sensor system including a first optical fiber having a first end arranged to receive light from a light souce, at least two optical fibers having diameters smaller than the first optical fiber, and at least two fiber optic sensors, each of the at least two smaller diameter optical fibers arranged between the first optical fiber and one of the sensors for transmitting light from the first optical fiber to that sensor. The sensors can be static or dynamic pressure sensors, strain sensors, temperature sensors or other environmental sensors.

17 Claims, 14 Drawing Sheets